

DIVISION 2 SITEWORK

02200 EXCAVATION, GRADING, AND BACKFILL

PART 1 – GENERAL

1.1 WORK

- A. Provide all related materials, equipment, and labor required to complete the work specified.
- B. All excavation, trenching, compaction, backfill, and landscaping shall be as listed in the **Scope** and as specified herein.

1.2 QUALITY OF WORK

- A. Provide experienced, well-trained workers competent to complete the work as specified.
- B. All work shall comply with governing building and safety codes.

1.3 SUBMITTALS

- A. Depending on the **Scope**, an erosion control permit maybe required. **Contractor** is required to obtain all required permits from the City of Milwaukee DCD Development Center (809 N. Broadway, 1st Floor) prior to starting any work.
- B. **Contractor** shall contact Diggers Hotline at 414-259-1181, or visit the Diggers Hotline website at www.diggershotline.com to request that the site be marked for underground utilities a minimum of three business days prior to starting any excavation work.
- C. When work involves excavation of public property, i.e. water or sewer connections, underground electrical lines, etc., the **Contractor** shall obtain all required permits and approvals from the City of Milwaukee Department of Public Works, Milwaukee Water Works, and/or WE energies prior to starting any work.

1.4 PRECONSTRUCTION AND PREPARATION

- A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
- B. Confirm there is no conflict between this work and work of other trades.
- C. Confirm that the work of other trades that must precede this work has been completed.

PART 2 – MATERIALS

2.1 FILL

- A. Fill materials shall be:
 - Uniform.
 - From an approved source.
 - Clean, free of debris or organic matter.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Protection:
 - Contact Diggers Hotline at least three business days prior to starting excavation work.
 - Protect overhead lines from damage by trucks and cranes.
 - If utility lines are damaged, they shall be repaired or replaced at the **Contractor's** expense.
 - Existing utilities that will interfere with construction shall be relocated.
 - Provide all necessary shoring and bracing as required by site conditions.
 - Provide temporary drains and/or pumps to remove ground and rain water.
- B. **Contractor** shall put in place all necessary erosion control measures as required by State and local building codes.

3.2 GRADING AND EXCAVATION

- A. Grade and excavate to lines, grades, and elevations as listed in the **Scope** and as specified herein.
- B. Grading for slabs shall be level and not crowned toward center portion of slab.
- C. Topsoil shall be placed at a depth of no less than 6 inches.
 - Topsoil shall be clean, free of rock and debris.
 - Topsoil removed from building perimeter shall be removed from the site and properly disposed of by the **Contractor**. **Do not** reuse this topsoil.

3.3 EXCAVATION

- A. Excavate areas required to complete the work as listed in the **Scope**, and as specified herein.
 - Footings shall be excavated to a depth of 4 feet below finished ground elevation.
 - Footing size shall be as required by building code.
- B. Excavation control:
 - Contact the Department of Neighborhood Services construction inspector at 286-2513 for all necessary inspections prior to pouring footing concrete.
 - Keep footing and foundation trenches uniform in width and direction.
 - Clean excavations of debris and loose dirt, and keep clean before pouring concrete.
 - Immediately remove dirt, rock, or other debris that spills onto paving or planting areas.
 - Take frequent measurements to prevent over-excavation.
 - Provide temporary drainage as necessary to prevent ponding, erosion, or spillover.

3.4 SITE MAINTENANCE DURING EXCAVATION AND GRADING

- A. Control excavation dust:
 - With water spray.
 - Through controlled demolition.
 - Using and installing approved barriers.
 - No dust shall be allowed to blow onto the neighboring property.
- B. Cleaning:
 - Do frequent and thorough cleanups.
 - Identify potentially harmful substances that might be uncovered during excavation.
 - Handle potentially harmful substances strictly according to governing regulations.
 - Contact the Milwaukee Health Department Lead Section at 286-5033 when suspected lead soil hazards will be disturbed.
 - Excavation and grading work shall be in compliance with Section 01810 Lead Dust Hazards and as directed by Milwaukee Health Department.
 - Suspected hazardous substances shall be removed from the site as per the governing regulations.

3.5 BACKFILL AND COMPACTION

- A. Before backfilling:
 - All inspections must be completed and approved.
 - Drains, drain tile, etc. shall be installed, inspected, and approved.
 - All exterior waterproofing has been completed, inspected, and approved.
 - Exterior foundation insulation has been installed (if required).
 - All formwork shall be removed.
 - All trash and debris shall be removed.
- B. Perform backfill and compaction in a systematic pattern, to assure complete and consistent work.
 - If any over excavation accidentally occurs, correct it with well-compacted backfill.
 - Fill and thoroughly compact holes from root and stump removal pits.
 - Do not allow any debris to be mixed with the fill.
- C. Protect foundation and retaining walls during backfilling.
 - Brace foundation or retaining walls to prevent damage from backfilling.
 - Do not allow damage to waterproofing or wall insulation board from backfilling.

3.6 SUBGRADE PREPARATION FOR PAVING

- A. Provide graded slopes as required for:
- Positive pavement slopes as required for driveways, patios, garages, walks, etc.
 - Backfill in layers, and thoroughly compact trenches or pits beneath paving.
 - Install base course firmly, and wet it down prior to concrete application.

3.7 SURFACE DRAINAGE

- A. Provide drainage catchers for roof water as well as surface runoff.
- B. Provide surface storm drainage free of impediments to smooth drain flow.
- Continuous
 - No narrow restrictions
 - No barriers
 - No sharp changes in direction
 - No sharp drops in grade
 - No level areas or depressions
- C. Provide erosion control measures as required by State and local building codes.

3.8 REPAIR AND CLEANUP

- A. Repair or replace work not in compliance with the **Scope** or these **Specifications**.
- Repairs shall be made at the direction of the **Inspector**.
 - Repairs shall be made at the **Contractor's** expense.
- B. **Contractor** is responsible for removal of all debris and excess material from site.
- C. Landscape disturbed areas as indicated in the **Scope** and as specified in [Section 02900 Landscaping](#).

END OF SECTION – 02200 EXCAVATION, GRADING, AND BACKFILL